


RFP Questions and Clarifications Memorandum

To: Vendors Responding to RFP Number 3627 for the Mississippi Department of Information Technology Services (ITS)

From: David L. Litchliter 

Date: April 5, 2010

Subject: Responses to Questions Submitted and Clarifications to Specifications

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The following questions were submitted to ITS and are being presented as they were submitted, except to remove any reference to a specific vendor. This information should assist you in formulating your response.

Question 1: Just to clarify, are the responses to the RFP specifically limited to just the make and model of the equipment listed in section 4.3.1 and 4.3.2 or can vendors submit other manufacturer's products that meet or exceed the technical specifications of the currently listed product?

Response: The equipment listed in sections 4.3.1 and 4.3.2 is equipment currently used by ITS that will be relocated to the new data center or equipment that will be procured by ITS using other procurement tools, not equipment to be proposed by respondents. The proposed SAN and Ethernet Network Components must be capable of interfacing with the listed equipment.

Question 2: How many top of rack devices?

Response: ITS provided the number of servers and expected growth in the RFP. Each vendor may have equipment with different port densities and configuration. We are expecting the vendor to propose a solution based on the number and server types provided, incorporating the expected growth.

Question 3: How many ports for each top of rack device?

Response: See response to question 2.

Question 4: How will all top of rack 10GE hardware be aggregated together?

Response: Aggregation is vendor and/or manufacturer design dependent. ITS is expecting vendors to propose the best solution based on the servers specified and the expected growth so that ITS can set a standard for hardware and purchase hardware as needed.

Question 5: How will all of the Core switch 10GE hardware be aggregated together?

Response: See response to question 4.

Question 6: Do pure fiber-channel switches also need to be quoted for SAN attachment beyond the FCOE enabled switches?

Response: Yes. We have SAN-connected equipment that will not use FCoE enabled switches.

Question 7: Does maintenance and ongoing licensing pricing need to be quoted on top of hardware? If so, what terms? 1 year, 2 year, NBD or 24x7x4?

Response: Yes. Vendors should review subsection 7, Warranty/Maintenance in Section VII, Technical Specifications where these details are specified.

Question 8: Do the Fiber Channel connected hosts have 2, 4 or 8GB HBAs?

Response: The HBAs are currently 4GB, but we expect these to be 8GB before proposed equipment is end-of-life.

Question 9: Are the proposed or current storage array(s) 2, 4 or 8GB Fiber Channel?

Response: The DS8300 is equipped with 4GB adapters. Expected equipment purchases will include 8GB or better adapters.

Question 10: Does ITS want responding vendors to propose a Datacenter core in addition to the top-of-rack switches? If yes:

- a. Does the core switch need to have the roadmap capability of supporting FCoE?
- b. Does ITS foresee a need for Layer 2 extensions over Layer 3 for virtualized environments?
- c. Do the switches need to be capable of supporting hitless code upgrades?
- d. Should they be capable of supporting 40GbE and 100GbE?

Response: Yes, if vendor design specifies Datacenter core.

- a. Yes.
- b. Not required, but advantageous.
- c. Yes.
- d. Desired when standardized.

Question 11: What type(s) of Converged Network Adapters will ITS be using in their VMware servers?

Response: Currently, ITS uses Qlogic adapters. Other adapters will be considered. There is an option in the RFP to propose a catalog for adapters.

Question 12: In addition to top-of-rack Ethernet and Unified Fabric switches, will ITS require top-of-rack Fiber Channel switches as well?

Response: No, but if there is a technical/financial reason to do so, propose the solution and explain the need in the response.

Question 13: Section 4.3.1.4: RFP discusses FCOE in the 12 3850 IBM Servers. How many CNA's are to be installed in each server as configured and how many racks do these servers span? Are CNA's single or dual port models? What is the expected growth?

Response: Each has two single port CNAs. The servers span two racks. Growth projections are discussed in the RFP.

Question 14: Section 4.3: How many ports per rack, racks per row and rows on both first and second floors (port count for Ethernet 10/100/1000 & 10GB, FCoE and FC 1/2/4/8 GB connections)? What is the expected growth of each technology?

Response: Within Section VII, Technical Specifications, ITS provides the number of servers and our expected growth. Each vendor may have equipment with different port densities and configuration. We are expecting the vendor to propose a solution based on the number and server types provided,

incorporating the expected growth. At this time, and prior to growth, we are assuming 11 racks per row with 3 rows on first floor and 1 row on second floor.

Question 15: Would all proposed racks be within 100 meters of the location of the core switch?

Response: Yes, to the best of our knowledge.

Question 16: Will 10GB connectivity between TOR switches and the core be via single mode fiber? If not, what type of MM fiber will be used and how many racks will be within the MM distance specification?

Response: Vendor should suggest best practice for proposed equipment and ITS will provide needed fiber.

Question 17: Section 4.15.2: How many vlans will exist in the proposed data center at implementation time? How many vlans would be added in a typical month?

Response: There are 300 VLANs at this time. ITS adds VLANs at our customers' request.

Question 18: Does the new datacenter have power budgets on either floor? Is there a watt per square foot power constraint or budget?

Response: The center was designed at 57 watts/sq ft.

Question 19: Would it be advantageous to allow the top of rack FCOE capable switches connect directly to storage?

Response: Not necessarily, but, if advantageous, the vendor may propose the solution and explain the advantages of the solution.

Question 20: Is IPv6 a future requirement?

Response: No.

Question 21: Is there a preference for either 110v or 220v power?

Response: 220v is preferred.

Question 22: Is there a requirement for DC Power?

Response: Not at this time, but if DC Power is an option for the proposed equipment, the vendor should so state in the proposal.

Question 23: What is the desired connection speed from the FCOE TOR switches to the core switch?

Response: The desired connection speed is at least 10GB, but if vendors have a better solution, they should propose it.

Question 24: For a TOR design, what is the desired maximum over-subscription rate on the uplinks to the core?

Response: ITS expects vendor recommendations.

Question 25: What are the connectivity options being considered between the new and old data center facilities, i.e. dark fiber, T3, etc.?

Response: Dark Fiber.

Question 26: Does ITS currently use ECFM?

Response: Yes.

Question 27: Section 4.11: States that the DS8000 has eight 4Gbps “adapters” and will need sixteen “adapters”, - please clarify - does this really mean “ports” as an IBM DS8000 has 4 ports per adapter?

Response: The sixteen adapters (actually ports) do not apply to the DS8300 which has 8 ports. At the time of the RFP development ITS was anticipating purchasing another storage device with sixteen 4GB ports. However, for this RFP response, assume a new storage device with between two and eight 8GB ports.

Question 28: Is Disaster Recovery part of this RFP?

Response: No, but failover should be included.

Question 29: Should we consider Extension or FCIP for Replication or Extended Backups?

Response: If advantageous, propose solution and explain how ITS will benefit from extension or FCIP.

Question 30: Please provide number of CNA's or HBA's in each Host?

Response: Assume two CNAs or two HBAs in each server. Assume only CNAs in IBM 3850s.

Question 31: Section 10.7: Please provide more detailed information about the Main Frame Infrastructure.

Response: Each mainframe is equipped with multiple FICON Express4 10KM LX cards, feature number 3321. We expect to direct-connect storage equipment over dark fiber at various times. Since the distance between the two centers is approximately 10KM, we are unsure whether the FICON will operate properly at that distance. Therefore, we are requesting, as an option, solutions to boost or extend the FICON channel to ensure that equipment can be purchased in a timely manner to facilitate FICON over the existing dark fiber. In the new data center, all storage devices will be direct-connected to the mainframe, other than the zLinux partitions that will be SAN-connected using FCP protocol on the FICON channel.

Question 32: When is the new data center completion date and move-in date?

Response: As stated in the RFP, this building, currently under construction by the Department of Finance and Administration's Bureau of Building, Grounds, and Real Property Management (BOB), will be occupied by ITS during calendar year 2010. An exact date is unavailable at this time.

Question 33: Is a blueprint/diagram available for the data center floor plan for the 1st and 2nd floor that shows existing equipment placement and APC rack placement that can be provided? If so, can a copy be obtained by bidder?

Response: This building is under construction so there is no diagram that shows existing equipment placement.

Question 34: Section 4.14.2: What is the estimated interim period of time of interoperability between the two (new / old) data centers being required?

Response: At a minimum the time period will be six months; however, it may also be a permanent arrangement.

Question 35: Section 4.3: Please provide the machine type serial numbers of the existing disk, SAN and NAS equipment. This is to ensure all compatibility and connectivity requirements are met.

Response: See subsection 2 in Section VII, Technical Specifications for the equipment list. Serial numbers will not be available.

Question 36: Section 4.9: States “the Vendor is required to provide capacity for dual HBAs and dual 10/100/1000 Ethernet adapters in all open services, excluding the CNA requirement for VMware servers.” Is “services” supposed to be servers?

Response: Yes.

Question 37: Is capacity expected to double on second floor as well as first in the next three years?

Response: Assume yes for the proposal, but the second floor has potential to grow much more quickly. This procurement will be used to make additional purchases to meet demand for the coming years.

Question 38: Is a blueprint/diagram available for the data center floor plan for the 1st and 2nd floor that shows existing equipment placement and APC rack placement that can be provided?

Response: See response to question 33.

Question 39: Section 7.5.1: Is the intent to have four hour response time support on all components provided in this RFP?

Response: Yes.

Question 40: Please provide current SAN FC Datacenter Infrastructure Topology and future Vision of the New Data Center.

Response: The FC SAN topology has always been a multi-fabric redundant pathway network. There is no plan to give up this redundancy.

Question 41: Can due date for RFP 3627 be extended 30 days until May 13, 2010?

Response: Due to the uncertain timeframe for ITS to take possession of and occupy the building, the date for responses to RFP No. 3627 cannot be extended.

Question 42: Will you provide an existing diagram showing server and SAN connectivity?

Response: Servers are connected with dual card HBAs to separate fabrics. Arrays are connected at higher speeds to those same fabrics.

Question 43: Will you provide an existing diagram that shows the 6500 core and MAN network connectivity?

Response: Such a diagram is not available at this time.

Question 44: Pg 37, 4.5 it is unclear what the 3 year capacity of the 2nd floor will be. Can you clarify?

Response: See response to question 37.

Question 45: Pg 37, 4.9 would you identify which hosts have open services?

Response: This should be open servers.

Question 46: Pg 37, 4.9-4.11 you provide some counts on HBAs and NIC ports. How ports many do we assume each of the other servers have for both HBA and GE (e.g. the Sun SPARC systems, Windows platforms, etc.)?

Response: Assume redundant connectivity.

Question 47: Pg 37, 4.11 would you define open systems? Are these the servers referred to in 4.3.1.11 only?

Response: For the purposes of this RFP, open systems are any servers not running the IBM z/OS operating system (mainframes). Section 4.3.1.11 refers to storage that would not be used by z/OS.

Question 48: Pg 38, 4.13 Are you asking where the SAN and DC switching equipment will be placed in the racks or all equipment? How many racks are available?

Response: We are asking where SAN and DC switching equipment will be placed in the APC racks, but we also need to know if any equipment will not fit into APC racks. Vendors need to provide information on how much rack space will be needed by various pieces of equipment.

Question 49: Pg 38, 4.15 Should we assume at least two 10GB uplinks to the core for redundancy?

Response: Yes.

Question 50: Pg 38, 4.18 Shows MPLS as an example protocol – is this something you need in the data center network? Or, are you asking about the data center/core interconnectivity?

Response: We were referring to capabilities of equipment being proposed, nothing more.

Question 51: Are you looking for the vendor to move the existing servers from the current data center to the new one and re-install them?

Response: No.

Question 52: Pg 40, 6.2 How many people will be involved in the training and knowledge transfer?

Response: Approximately six.

Question 53: Pg 42, Section 8 talks about a project plan. Is this plan to include only the SAN and networking equipment or is this for the entire project including scheduling application down-time, end-user testing, etc.?

Response: SAN and Network equipment only.

Question 54: Is there any LAN or SAN equipment that is planned to be reused inside the NEW data center?

Response: We are expecting to use only new LAN and SAN equipment in the new data center. Existing servers and storage devices will be moved.

Question 55: Are there available fiber strands between the floors? If so, what type and what are the distances between the fiber terminations and the location of the data center servers/storage?

Response: Vendor must state what is needed and ITS will make the fiber available.

Question 56: What floor and location is the Core switch/router located?

Response: It is located on first floor in close proximity to other devices.

Question 57: Will you be placing your own cables under floor or on racks or is that something you expect the vendor to complete?

Response: ITS will complete all cabling.

Question 58: Which model APC rack will be provided?

Response: AR3100 will be provided.

Question 59: Is any cable management provided with the racks?

Response: Yes.

Question 60: What type and quantity of power is available in each rack?

Response: Vendor must state what is needed and ITS will provide it, keeping in mind already stated preferences. Assume power outlets are 220V 16A.

Question 61: Does this require weekend or evenings for cut-over or installations?

Response: Installation should not require weekend work. Cutover will take place on weekends.

Question 62: Do the Fiber Channel connected hosts have 2, 4 or 8GB HBA's?

Response: See response to question 8.

Question 63: Are the proposed or current storage array(s) 2, 4 or 8GB Fiber Channel?

Response: See response to question 9.

Question 64: What type(s) of Converged Network Adapters will ITS be using in their VMware servers?

Response: See response to question 11.

Question 65: In addition to top-of-rack Ethernet and Unified Fabric switches, will ITS require top-of-rack Fiber Channel switches as well?

Response: See response to question 12.

Question 66: How many top of rack devices?

Response: See response to question 2.

Question 67: How many ports for each top of rack device?

Response: See response to question 2.

Question 68: How will all top of rack 10GE hardware be aggregated together? Core switch?

Response: See response to question 4.

Question 69: Do pure fiber-channel switches also need to be quoted for SAN attachment beyond the FCOE enabled switches?

Response: See response to question 6.

Question 70: Does maintenance and ongoing licensing pricing need to be quoted on top of hardware? If so, what terms? 1 year, 2 year, NBD or 24x7x4?

Response: See response to question 7.

Question 71: What is the current software version of the McData Intrepid 6140?

Response: **Firmware version is 09.07.02-1.**

Question 72: What is the current software version of the McData Sphereon switches?

Response: **These switches will not be used in any future configuration.**

Question 73: Question 4.14 – Does the McData director have open FC ports for FC extension to the new data center? If so, how many ports are available? Regarding the connection to the Mcddata SAN switch, is it preferred to be direct fiber connection or FCoE/FCIP by data fiber?

Response: **Multiple ports are available. Dark fiber connection is expected.**

Question 74: Questions 4.3 – for systems listed that have no specific FC quantity and speed, or specifically listed network requirements, how many ports on the new SAN and network should be allocate for these systems?

Response: **See response to question 30.**

Question 75: Question 4.3.1.9 – how many network and FC ports and what speeds do we need to allocate for the 10 windows systems? Would these systems fall under 4.9, even though there are no details on these systems?

Response: **These servers fall under 4.9.**

Question 76: Question 4.3.1.11 –states one undetermined 60TB storage subsystem for open systems; Are you asking for a recommendation on a 60TB storage subsystem or is that something you will be acquiring in a separate RFP? If it is a different RFP, how many FC ports do we need to allocate in the design, and what speeds, for the undetermined SAN?

Response: **A separate RFP will be issued. Assume between two and eight 8GB ports.**

Question 77: 4.6 states that any additional equipment on the second floor will not utilize the Data Center SAN; can you verify if the existing servers listed on 4.3.2 will not use the SAN as well?

Response: **These servers will not use ITS SAN.**

Question 78: Question 4.8 / 4.15 – Does the existing Core network have open 10G slots available to connect to the new proposed equipment? If so, are they XENPAK or X2 interfaces? How many ports are currently available (if any) in the existing core? If none, do we need to propose the necessary module upgrades to the core 4500 and 6500 to support 10G connectivity?

Response: **Vendor must identify needed connectivity. ITS will provide upgrades to core equipment.**

Question 79: In addition to the fiber to Cisco 6500 core network, is there a dedicated dark fiber available for SAN connection between the two data centers?

Response: **Yes.**

Question 80: Will ITS provide the necessary power in the new APC racks for the proposed equipment in any PDU configuration, or do we need to limit our power requirements to specific PDU configurations (110V / 20A, 208V / 20A, etc)? Does ITS have a preference for the power supply needs of the proposed equipment in regards to voltage or amperage?

Response: **208V or above preferred. ITS will provide power. Vendor must state power needs if above 208V and 16A.**

Question 81: Will the new data center be built to a specific power or heat load per rack, for our rack planning purposes for the proposed equipment?

Response: **Power consumption and heat load will be considered in evaluation. Unless otherwise proven, heat load will be assumed to be 2x power consumption in kVA.**

Question 82: Statement 2.3 they state that the ports are 70% populated. May we get the exact number of ports? The math would be 96 ports.

Response: **Eighty-seven ports are populated.**

Question 83: Statement 2.8 they state that they have dark fiber but do not state how many fibers are available for use. They also do not state if it is single mode but it is assumed that it is single mode. They also express concerns about the dark fiber distance (see 10.7) is it possible to get an exact distance and power budget for the dark fiber?

Response: Sufficient fiber is available. The State has two 192 strands for all uses. Fiber is single mode. Vendor must state the power budget needed for proposed equipment. Distance varies based on path, so the approximate distance of 10KM is all that is known at this time.

Question 84: Statement 4.3 they list hosts that are going into the data center. For the purposes of providing CNA boards we need to know the types of available and open slots in EACH host as well as the length of the slot (full, half, other). Additionally, some items are listed as connecting to the SAN and the Network but no provision is made to detail how many current connections each device has. This information is vital. A specific example is the IBM TS3500 that is SAN attached. How many connections to the SAN does it have? I would like to see a list of each host listed in this section that details the current connections that it has to the network as well as to the SAN.

Response: ITS is asking for a catalog of CNA boards so that ITS can order as needed. The TS3500 is not currently SAN connected.

Question 85: Statement 4.5 states that we should plan on the capacity doubling, but the current capacity is not stated. Please see the above question.

Response: ITS expects a configuration that will accommodate the equipment listed in the RFP in Section VII, subsection 4.3. Vendor should then assume that the equipment will double allowing ITS to determine how the proposed options will scale.

Question 86: Statement 4.9 alludes to an assumed capacity planning number but is unclear as to exactly which hosts are covered by this assumption. It would be appropriate for the list in 4.3 to be enumerated for this assumption.

Response: Assume two HBAs and two 10/100/1000 network connections for all servers except the IBM 3580 with CNA adapters.

Question 87: Statement 4.10 states Gigabit Ethernet LX is this correct or is the type SX for short range fiber?

Response: These are OSA Express2 GbE LX cards feature number 3364 in the IBM zSeries.

Question 88: Statement 4.15 states that the core 6500's will have 10Gb connections but later it states that favorable consideration will be give to vendors that provide the seamless connectivity. To provide this provision in 10.7 we need to have some

exact information on the existing 6500's will it be possible to get a show version and show modules and a show tech from all of the impacted 6500's?

Response: Vendor must state requirements and ITS will ensure the 6500 will support awarded solution.

Question 89: RFP 3627 Section III Items 8 & 9 give ITS the right to make multiple awards and/or to make awards whole or in part. In our judgment, the State may be better served by: (1) purchasing the SAN switches or directors and related implementation services from one vendor; and (2) purchasing the FCoE capable switches, top of rack solutions, general Ethernet switches and related implementation services from another vendor. Does the State plan to give serious consideration to the aforementioned provisions in Items 8 & 9? If so, will ITS modify the specifications to clearly instruct bidders to respond to the RFP in two separate sections? We suggest such an action to facilitate the RFP evaluation and award process if the State should elect to make multiple awards by product category. If the State takes such action, then would a bidder be free to submit a response to one section, and to no-bid the other section without being disqualified from the section the bidder is bidding on?

Response: ITS is looking for a single solution; Vendors may partner to provide a single solution. Vendors may also, at their own risk, take exception and respond to only certain items. Vendors who elect to take exception are encouraged to read carefully Section V, Proposal Exceptions.

Question 90: RFP 3627 Section IV Item 37 states that a Vendor is not required to submit the price of a Performance Bond/Irrevocable Letter of Credit with the Vendor's RFP response. This Section also states that the Performance bond or Irrevocable Letter of Credit may be required upon contract award at the State's sole discretion. Does this seeming conflict in RFP specifications mean that the State and the Vendor are to agree on the additional cost to the State for such a Bond/Letter (if required) during post-bid/pre-contract negotiations in order for award to be complete? If so, and if the State should determine that this additional cost quoted to the State is not acceptable to the State, then would it be correct to assume that the award would be made to "second place" vendor with the RFP from the "highest scoring vendor" being rejected and that the "first place" vendor would receiving full release of his/her \$10K proposal bond?

Response: ITS will not require a Performance Bond as part of this procurement. A \$10,000.00 Proposal Bond is required with the submission of an RFP response.

Question 91: RFP 3627 Exhibit A, Article 13 (d) on page 58 allows the State to terminate the Agreement for any reason without penalty. In theory, the Vendor could have already received the hardware upon receipt of any award termination (without any cause stated other than termination for the convenience of the State). May the vendor provide in his/her RFP response fair and equitable termination charges (i.e. restocking fees, etc.) that would be applicable to a termination for the convenience of the State, without such response language disqualifying the vendor from consideration for the award?

Response: Vendors should take exception to any item, including the Standard Purchase Agreement, to which they cannot agree. It is up to the Vendors to include any termination charges that they must invoke, keeping in mind that such charges may be included in the cost evaluation.

RFP responses are due April 13, 2010, at 3:00 p.m. (Central Time).

If you have any questions concerning the information above or if we can be of further assistance, please contact Paula Conn at 601-359-4411 or via email at Paula.Conn@its.ms.gov.

cc: ITS Project File Number 37515